
A B S T R A C T

a 3 The present invention relates to a method of producing solid carbonaceous C_xH_y , wherein the ratio of $x:y$ is greater than 2.5:1, or a hydrogen-rich gas, wherein a hydrocarbon fuel is heated with limiting amounts of oxidizer to a temperature of at least about $1000^{\circ}C$ whereby to effect incomplete combustion and pyrolytic decomposition of said hydrocarbon fuel, the carbonaceous product produced by that method, a method of combusting the gas produced by that method and reactors for performing these methods.
